the comet to greater nicety than even the best observations can afford.

"I have appended a modification of Olbers' formulæ for the radii vectores and chord adapted to equatoreal positions, and involving the use of the angular quantities already computed for the use of the constant curve. The additional work of computation does not appear to be so great as that which is required to convert the right ascension and declination into latitude and longitude; and, besides, it is easier to compare observations with the computed elements when the latter are referred to the equator. The inclination of the orbit and position of the nodes are transferred to the ecliptic by the solution of one spherical triangle.

"In the recent improvements which Olbers has made in his method, by expanding Euler's formula into a series and reversing, the means are afforded of constructing a small table which shortens considerably the process of finding the distance by trial and error. Another improvement consists in the new expression given for the chord being more favourable to accurate computation. I have included a form of the same kind in terms of the right ascension and declination which is almost wholly made up of angular quantities that have already been prepared and used with the constant curve.

"In the last part of the paper an expression for the angle at the comet is given to be used with the differential method which, in solving by trial and error, requires only five tabular references."

II. On the Longitude of the Observatory at Hartwell House, Buckinghamshire, from Observations of Moon-Culminating Stars. By John Glaisher, Esq.

The observations were made in consequence of the longitude hitherto assumed differing considerably from that given by the Trigonometrical Survey.

The places of the stars given in the moon-culminating list of the *Nautical Almanac* have been generally used, and the result will, therefore, require some corrections, depending on the errors of their tabular right ascensions. The extreme difference of forty-two partial results is 19^s, and it is, therefore, probable that the mean of all, viz. $2^m\ 56^s{\cdot}60$ west, is very near the truth.

III. Collection of Results from East Indian Observations of the Great Comet of 1844–5 (Wilmot's). By W. Pole, Esq.

The comet was observed at three observatories in India, viz. at Bombay, Madras, and Trevandrum. The first of these is under the direction of Professor Oclebar, but the observations were made by native assistants; the Madras observations were made by Mr. Taylor; and those at Trevandrum by Mr. Caldecott. Isolated observations were also made at sea by Captain Drinkwater Bethune, C.B., and by Captain Young, I.N.; and at Bombay by Mr. Waterston, the Astronomical Instructor to the Indian Navy, and by the author.

The author has arranged in a table the places of the comet deduced from all the above observations, excepting the Madras, which he had not been able to procure; and he specifies the name of the observer and the place of observation for each result, as well as the authority from which it has been obtained. He gives also a table containing five sets of elements, two of which were computed by himself, and the remaining three by Messrs. Waterston, Taylor, and Caldecott.

IV. Sextant Observations of the Great Comet of 1844–5, made at Colombo, near Ceylon, by W. H. Simms, Esq. Communicated by W. Simms, Esq.

The times given are corrected for error of watch, and the observed distances for index-error.

The following are the observed distances:—

1845, Jan. 5; bar. $30^{in}\cdot10$; therm. 82°.

For Colombo Mean Time.

At 6 59	Distance from	α Eridani.....	33 46′ 45″
7 5	...	Fomalhaut ...	16 42 4
7 15	...	α Eridani.....	33 43 59
7 23	...	Fomalhaut ...	16 41 55
7 33	...	Sirius	102 34 10

Jan. 6; bar. $30^{in}\cdot06$; therm. 84°.

At 6 57	Distance from	Fomalhaut ...	15 34 0
7 1	...	α Eridani.....	32 5 0
7 3	...	Fomalhaut ...	15 33 20
7 6	...	α Eridani.....	32 5 0
7 12	...	α Arietis	84 1 0
7 18	...	Rigel	92 35 30

Jan. 7; bar. $30^{in}\cdot04$; therm. 84°.

At 7 0	Distance from	Fomalhaut ...	14 40 59
7 1	...	α Eridani.....	30 31 30
7 3	...	β Ceti	36 37 15
7 7	...	Fomalhaut ...	14 37 45
7 9	...	Fomalhaut ...	14 39 40
7 15	...	α Eridani.....	30 30 35
7 17	...	Fomalhaut ...	14 39 30
7 20	...	β Ceti	36 36 10
7 24	...	α Eridani.....	30 30 58
7 27	...	α Arietis	82 16 53
7 32	...	Rigel	90 26 10

The comet was ill defined this evening, rendering the comparisons with Fomalhaut and α Eridani very distressing.

Jan. 8; bar. $29^{in}\cdot97$; therm. 83°.

For Colombo Mean Time.

At 6 59	Distance from	Fomalhaut ...	14° 4′ 23″
7 3	...	α Eridani.....	29 5 6
7 6	...	β Ceti	34 44 17

During these observations the comet was very indistinct.